UNITED STATES PATENT AND TRADEMARK OFFICE

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UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Application Number: 10/070,069
Filing Date: March 04, 2002
Appellant(s): DOLBEAR ET AL.

Valerie M. Davis (#50,203)
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed on 8/23/087 appealing the pending rejection

of claims 1-3, 5-11 of the final Office action mailed 3/15/07.

(1) Real Party in Interest

A statement identifying by name the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings

which will directly affect or be directly affected by or have a bearing on the Board's decision in

the pending appeal.

(3) Status of Claims

The statement of the status of claims contained in the brief is correct.

(4) Status of Amendments After Final

The appellant's statement of the status of amendments after final rejection contained in

the brief is correct.

(5) Summary of Claimed Subject Matter

The summary of claimed subject matter contained in the brief is correct.

(6) Grounds of Rejection to be Reviewed on Appeal

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

(7) Claims Appendix

The copy of the appealed claims contained in the Appendix to the brief is correct.

(8) Evidence Relied Upon

6,580,754   Wan et al.   6-2003

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

I.   Claims 1-3, 5-11 are rejected under 35 U.S.C. 102(e) as being anticipated by Wan et al.,

(hereinafter referred to as "Wan").

Wan discloses a method of enhancing a video bit stream using temporal scalability (Wan:

column 4, lines 5-10), wherein peak signal-to-noise ratios (Wan: column 11, lines 50-60) of

bidirectionally predicted pictures (Wan: figure 2) in an enhancement layer are determined with

reference to the peak signal-to-noise ratios of pictures in another layer (Wan: column 5, lines 25-

35; column 7, lines 50-60), as in claim 1.

Wan discloses a method of enhancing a video bit stream using temporal scalability (Wan:

column 4, lines 5-10), wherein the number of bits allocated to encode a bidirectionally predicted

picture (Wan: figure 2) of an enhancement layer (Wan: column 4, lines 50-60) is determined

with reference to the number of bits used to encode (Wan: column 8, lines 60-67; column 9, lines 1-30) a picture of another layer (Wan: column 10, lines 25-35), as in claim 2.

Wan discloses a method of enhancing a video bit stream using temporal scalability (Wan: column 4, lines 5-10), wherein temporal positions of bidirectionally predicted pictures (Wan: figure 2) in an enhancement layer (Wan: column 4, lines 50-60) are determined to be spaced evenly with reference to temporal positions of pictures in other layers (Wan: column 5, lines 35-40), as in claim 3.

Regarding claim 5, Wan discloses wherein the peak signal-to- noise ratios are made similar (Wan: column 8, lines 40-50), as in the claim.

Regarding claim 6, Wan discloses wherein the other layer is a base layer (Wan: column 4, lines 40-45), as in the claim.

Regarding claim 7, Wan discloses wherein characteristics of more than one picture in another layer are considered (Wan: column 7, lines 35-40), as in the claim.

Regarding claim 8, Wan discloses a first enhancement layer uses SNR scalability to produce enhanced pictures (Wan: column 4, lines 65-67; column 5, lines 1-10); and a second enhancement layer uses temporal scalability to produce enhanced pictures (Wan: column 5, lines 30-35), based on temporal positions of pictures in the first lower enhancement layer (Wan: figure 2), as in claim 8.

Regarding claim 9, Wan discloses wherein an average number of bits used to define a predicted picture and an average number of bits used to define a picture in the another layer are used to define a weighting value (Wan: column 8, lines 50-67; column 9, lines 1-20), as in the claim.

Regarding claims 10-11, Wan discloses an apparatus which implements a method according to claim 1, the apparatus (Wan: figure 1) including: means for selecting temporal position (Wan: column 5, lines 30-35), PSNR (Wan: column 10, lines 25-35) and/or number of bits of a bidirectionally predicted picture (Wan: figure 2) based on information relating to a picture in another layer (Wan: column 9, lines 1-10), as in the claims.

(10) Response to Argument

The Appellant presents four substantive arguments contending the Examiner's rejection of claims 1-3, 5-11 are rejected under 35 U.S.C. 102(e) as being anticipated by Wan et al., (hereinafter referred to as "Wan"), as was set forth in the Office Action of 11/1/06, and repeated above for the Board's convenience. However, after a careful consideration of the arguments presented, and further scrutiny of the applied references, the Examiner must respectfully disagree, and submit to the Board that the rejection is proper and should be maintained.

After establishing the legal basis for the Appellant's arguments (Brief of 6/20/07: page 10, lines 3-8), and providing Appellant's interpretation of the applied citation of the reference directed towards "temporal scalability" (Brief of 6/20/07: page 10, lines 9-24; page 11, lines 1-5), the Appellant argues that Wan's disclosed "brief review" of the temporal scalability fails to address the claims as recited in the instant invention (Brief of 6/20/07: page 11, lines 6-24; page 12, lines 1-2). The Examiner flatly disagrees. While the Appellant would have the Board believe that disclosed Wan reference is directed towards solely simulcast and spatial coding, the Examiner notes that Wan discloses the invention *merely focuses* on the performance of spatial scalability versus its simulcast counterpart (Wan: column 6, lines 27-34). The Examiner asserts that while Wan focuses on spatial and simulcast scalability, it is in conjunction with

implementing temporal scalability in accordance with the MPEG-4 standard that is the

environment of reference's teaching (Wan: column 2, lines 16-25). As such, the Examiner asserts

that Wan implements one of the two hybrid combinations: temporal & spatial scalability or

temporal & simulcast coding. The Examiner notes that while Wan may not highlight the details

of the method of implementing temporal scalability to the Appellant's satisfaction, it is duly

noted that the teaching is more than just a "brief review" of temporal scalability. In short, Wan

discloses the environment of the reference is for implementing temporal scalability in coded

signals along with either the spatial scalablity component or simulcast coding (Wan: column 15,

lines 40-50: "...*improving* the spatial, *temporal resolution, and/or* quality...") and is sufficient

to read upon the *method of enhancing a video stream using temporal scalability* as recited in

the preambles of the claims under appeal. As such, the Examiner maintains Wan sufficiently

applies.

Secondly, the Appellant argues that the additional recitation of "...peak signal-to-noise

ratios of bidirectionally predicted pictures in an enhancement layer are determined with reference

to the peak signal-to- noise ratios of pictures in another layer..." is not anticipated nor inherent in

Wan because the steps discussed in Wan are depicted in conjunction with the reference's

discussion of simulcast coding (Brief of 6/20/07: page 12, lines 3-24; page 13, lines 1-13). The

Examiner respectfully disagrees. The claim in question only recites "...with reference to..." and

has been interpreted as such, insomuch, as there is *no equational relationship* in the claim to

define over the Wan teaching. In response to applicant's argument that the references fail to show

certain features of applicant's invention, it is noted that the features upon which applicant relies

(i.e., an implied mathematical function) are not recited in the rejected claim(s). Although the

claims are interpreted in light of the specification, limitations from the specification are not read

into the claims. See *In re Van Geuns, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993)*. Now,

the Examiner will point that Wan as recited does use the PSNR factor as an operative metric

throughout the reference, and while the citation of using the PSNR measurement is disclosed in

conjunction with simulcast coding (Wan: column 9, lines 5-12), that this measure is pervasive

throughout the reference, such as with spatial scalability (Wan: column 12, lines 25-55), and is

the preferred measurement tool discussed and therefore would inherently be used in the

implementation of temporal scalability coding (Wan: column 7, lines 20-30). That addresses the

"peak signal to noise ratio" of the limitation. Now, one comes to "with reference to…from

pictures in another layer…" limitation claim. In order for this limitation to be met, the Examiner

must show that a B frame in the enhancement layer manifests a dependence upon a frame in base

layer. Wan clearly shows this while showing how enhancement layer frames are constructed in a

sequence of enhancement layer frames (Wan: figure 2, enhancement B frame refers to a base

layer I frame; figure 3, enhancement layer B frame refers to a base layer B frame). As such, the

Examiner has shown that the same measurement (i.e. the PSNR metric) is used throughout the

reference, and has shown the operative flow of enhancement layer B frames is the same as in the

limitation, and thus, any modification in the temporal resolution of the signal (Wan: column 15,

lines 40-50: "…*improving* the spatial, *temporal resolution*, and/or quality…") inherently makes

use of the factors as broadly recited in the claims.

Additionally, the Appellant argues that Wan fails to read upon the Regarding independent

"…the number of bits allocated to encode a bidirectionally predicted picture of an enhancement

layer is determined with reference to the number of bits used to encode a picture of another

layer..." as in the claims (Brief of 6/20/07: page 13, lines 14-24; page 14, lines 1-9). The

Examiner respectfully disagrees. It is unclear to the Examiner how Appellant concluded that

since encoding was done "...various fixed quantization levels with no rate control..." this

doesn't read on the limitation as discussed herein. The Examiner notes that the salient area of

Wan is the Table I (continued) entries (Wan: column 7, lines 1-20). The Examiner notes that Q_B

(the quantization step size used for bit allocation) in the enhancement layer (Wan: column 7,

lines 1-20: Table I (continued), righmost value for Q_B) is defined as:

min ($1.8Q_I$, 32)

It is further noted that Q_I is the quantization step size used for bit allocation for an I frame. But

with base/enhancement layer coding, *I frames are always in the base layer* (Wan: figures 2 and

3: no I frames occur in the enhancement layer), and as such, the use of an base layer I frame

quanization factor to determine an enhancemnent layer B frame quantization factor reads on the

limitation in question. Again, there is no equational relationship that would supercede this

application of Wan against the discussed limitation.

Lastly, the Appellant argues that Wan fails to disclose "...temporal positions of

bidirectionally predicted pictures in an enhancement layer are determined to be spaced evenly

with reference to temporal positions of pictures in other layers..." as in the claim (Brief of

6/20/07: page 14, lines 11-24; page 15, lines 1-17). The Examiner respectfully disagrees. It is

noted Wan's discussion of temporal scalabilty discloses that the position and placement of the

enhancement layer B frames are spaced at fixed intervals with regards to those frames in the base

layer (Wan: figures 2 and 3; column 4, lines 50-60), and further discloses that the periodicity of

the B frames in an enhancement layer is settable with regards to the frames in base layers (Wan:

column 7 lines 1-20: Table I continued- M, N for enhancement layer scaleable streams). As such,

the Examiner would maintain that the limitation is met.

Although not directed towards any specific argument presented by the Appellant, but

more towards the overall thrust of the Brief, the Examiner must note that although the Appellant

might believe that the claims are concise and to the point as strenuously argued, they really fail

to distinguish over the reference in terms of just a general functionality of the claimed invention.

Terms such as "...determined with reference to...", "...determined to be spaced evenly...",

"...made similar...", "...are considered...", and etc., only define the most tenuous of

interrelationships, and just from as simple showing of Wan do not preclude anticipation.

(11) Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the examiner in the Related

Appeals and Interferences section of this examiner's answer.

Conclusion

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

Anand S. Rao
Primary Examiner
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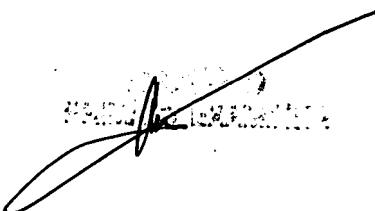
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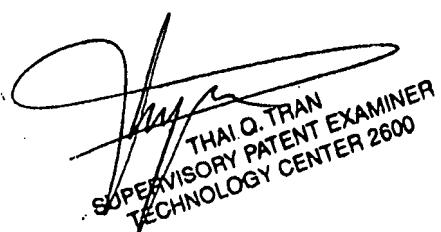
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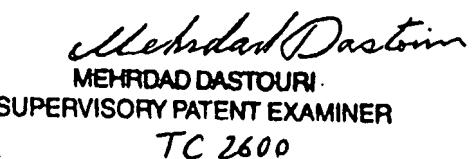
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